

Attorney Docket No.: ABLE-0027
Inventors: Scott et al.
Serial No.: 10/561,500
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This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claims 1-36 (canceled)

Claim 37 (currently amended): A method for the reversible formation of membrane pores, the method comprising the steps of:

a) incubating the membrane in the presence of a composition ~~according to claim 30~~ comprising a reversible pore-forming sponge toxin comprising at least one polymeric 1,3-alkylpyridinium salt (poly-APS); and

b) removing the composition from contact with the membrane.

Claim 38 (previously presented): The method according to claim 37, further comprising, addition of zinc solution to attenuate the reversible formation of membrane pore.

Claim 39 (previously presented): The method according to claim 38 wherein the concentration of zinc solution is between substantially 1 to 2 mM.

Claim 40 (previously presented): The method according to claim 39, wherein the concentration of zinc is 1.5 mM.

Claim 41 (currently amended): A method for transfection of a macromolecule into a cell *in vitro*, the method comprising the steps of:

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a) incubating the cell in the presence of ~~the composition of claim 30~~ a composition comprising a reversible pore-forming sponge toxin comprising at least one polymeric 1,3-alkylpyridinium salt (poly-APS);

b) removing the composition from contact with the cell; and

c) adding a macromolecule.

Claim 42 (previously presented): The method according to claim 41, wherein the macromolecule is selected from the group consisting of nucleic acid, cDNA, protein, peptide, lipid and oligonucleotide.

Claim 43 (previously presented): The method according to claim 41, wherein the cell is incubated in the presence of the composition for between 1 and 20 minutes prior to addition of the macromolecule.

Claim 44 (previously presented): The method according to claim 43 wherein the cell is incubated in the presence of the composition for 5 minutes prior to the addition of the macromolecule.

Claim 45 (previously presented): The method according to claim 42, wherein between 1.0 and 5.0 µg nucleic acid is added.

Claim 46 (previously presented): The method according to claim 45, wherein 2.5 µg nucleic acid is added.

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Claim 47 (previously presented): The method according to claim 41, wherein the cell is incubated in the presence of the composition and macromolecule and the composition and macromolecule are removed and replaced with standard media.

Claim 48 (previously presented): The method according to claim 47 wherein the cells are incubated for between 20 and 200 minutes.

Claim 49 (previously presented): The method according to claim 48 wherein the cells are incubated for 180 minutes.

Claim 50 (currently amended): A method for transfection of a macromolecule into a cell *in vivo*, the method comprising the step of:

a) incubating the cell in the presence of ~~the composition of claim 30~~ a composition comprising a reversible pore-forming sponge toxin comprising at least one polymeric 1,3-alkylpyridinium salt (poly-APS) and a macromolecule.

Claim 51 (previously presented): The method according to claim 50, wherein the macromolecule is selected from the group consisting of nucleic acid, cDNA, protein, peptide, lipid and oligonucleotide.

Claim 52 (previously presented): The method according

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to claim 51, wherein the macromolecule is the cytoskeletal protein tau.

Claim 53 (previously presented): The method according to claim 50 wherein the cell is a hippocampal neurone.

Claim 54 (currently amended): A model for use in the study of neurological disease or treatments thereof, the model comprising a rodent having undergone application of ~~the composition of claim 30~~ a composition comprising a reversible pore-forming sponge toxin comprising at least one polymeric 1,3-alkylpyridinium salt (poly-APS), tau protein and phosphatase inhibitor to the hippocampus.

Claim 55 (previously presented): The model according to claim 54 wherein the neurological disease is Alzheimer's disease.

Claim 56 (previously presented): The model according to claim 54 wherein the rodent is a rat or a mouse.

Claim 57 (previously presented): The model according to claim 54 wherein the phosphatase inhibitor is okadaic acid.

Claim 58 (currently amended): A method of studying a neurological disease, the method comprising:

a) applying ~~the composition of claim 30~~ a composition comprising a reversible pore-forming sponge toxin

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comprising at least one polymeric 1,3-alkylpyridinium salt
(poly-APS), tau protein and phosphatase inhibitor to the
hippocampus of a rodent; and

b) studying the effect on the rodent.

Claim 59 (previously presented): The method according
to claim 58 wherein the phosphatase inhibitor is okadaic
acid.

Claim 60-63 (canceled)